Medical Library

JUN 2 1942

Volume III JUNE 1942 Number 6.

DISEASES OF THE NERVOUS SYSTEM

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

PUBLISHED MONTHLY for the PHYSICIAN in the GENERAL PRACTICE of MEDICINE

CONTENTS:

MECHANICS OF CIVILIAN MORALE (Page 166)
D. Ewen Cameron, M.D., Albany, New York

THE RELATION OF THE REFLEX RESPONSE TO TOTAL BEHAVIOR (Page 170)
H. S. Rubinstein, M.D., Baltimore, Maryland

PHYSICIAN DRUG ADDICTS (Page 173)
M. J. Pescor, M.D., Fort Worth, Texas

PRACTICE OF THE COLLEGE PSYCHIATRIST (Page 175)
Margaret R. Anthonisen, M.D., Wellesley, Massachusetts

THE VALUE OF ELECTROENCEPHALOGRAPHY IN NEUROLOGY (Page 185)
A. E. Bennett, M.D., Omaha, Nebraska

EXAMINATION OF THE ALCOHOLIC PATIENT: PROBLEMS IN DIFFERENTIAL DIAGNOSIS (Page 188)
H. Houston Merritt, M.D., Boston, Massachusetts

EDITORIAL, ABSTRACTS, NEWSNOTES, SANITARIA

ASSOCIATE EDITORS

Peter Bassoe, M.D. — Chicago, Illinois	Jacob Kasanin, M.D. — San Francisco, California
A. E. Bennett, M.D. — Omaha, Nebraska	H. Beckett Lang, M.D. — Albany, N. Y.
Franklin G. Ebaugh, M.D. — Denver, Colorado	Frank H. Luton, M.D. — Nashville, Tennessee
O. Spurgeon English, M.D. — Philadelphia, Penn.	Wm. Malamud, M.D. — Worcester, Massachusetts
Temple Fay, M.D. — Philadelphia, Penn.	Donald McEachern, M.D. — Montreal, Canada
Hamilton Ford, M.D. — Galveston, Texas	Karl A. Menninger, M.D. — Topeka, Kansas
Walter Freeman, M.D. — Washington, D. C.	Adolf Meyer, M.D. — Baltimore, Maryland
Jas. K. Hall, M.D. — Richmond, Virginia	Glenn Myers, M.D. — Los Angeles, California
George T. Harding, M.D. — Columbus, Ohio	Hans H. Reese, M.D. — Madison, Wisconsin
A. Hauser, M.D. — Houston, Texas	Paul L. Schroeder, M.D. — Chicago, Illinois
Eugen Kahn, M.D. — New Haven, Connecticut	Theodore A. Watters, M.D. — New Orleans, La.
Louis J. Karnosh, M.D. — Cleveland, Ohio	Wm. Walter Young, M.D. — Atlanta, Georgia

Titus H. Harris, M.D.
Galveston, Texas
EDITOR-IN-CHIEF

YEARLY SUBSCRIPTION $2.50
SINGLE COPIES 25 Cents

Murray Kornfeld
Chicago, Illinois
MANAGING EDITOR

THE

RING SANATORIUM AND HOSPITAL

Arlington Massachusetts

Eight miles from Boston at an elevation of 400 feet

63rd Year

Specializing in the individualized care of Neuropsychiatric illnesses and Habit conditions. All accepted Therapies under the direction of a resident medical staff and trained assistants. Cottage plan permits a variety of accomodations.

HAROLD INMAN GOSLINE, M.D., F.A.C.P.
Medical Director

HALLAM T. RING
Administrator

In conjunction: The Ring School of Psychiatric Nursing

WADSWORTH SANITARIUM

"WOODSCOURT"

SOUTH NORWALK, CONNECTICUT

(One hour from New York City by Merritt Park Way, or by rail)

A QUALIFIED HOME-LIKE INSTITUTION (FOR 25 GUESTS IN PRIVATE ROOMS) IN AN ATMOSPHERE WHICH IS CHEERFUL, WHOLESOME, AND CONDUCIVE TO BOTH MENTAL AND PHYSICAL WELL BEING. PROVIDING COMPETENT MEDICAL AND NURSING CARE FOR ALL TYPES OF CONVALESCENTS AND THOSE SUFFERING FROM NERVOUS DISORDERS.

For detailed Information Write:
"WOODSCOURT"
South Norwalk, Connecticut.

HARRY G. HOUZE, M.D.
Physician In Charge.

COMPTON SANITARIUM

AND

LAS CAMPANAS HOSPITAL

COMPTON, CALIFORNIA

(Near Los Angeles)

Compton Sanitarium is a private psychiatric hospital with 120 beds. Emphasis is given psychotherapy by a staff of resident psychiatrists. Other treatment procedures are duly evaluated and administered. Careful records are maintained. There are psychiatrically trained graduate nurses; student nurses through affiliation; nursing attendants; dietitian; occupational therapist; recreational therapist; hydrotherapist; masseuse. Las Campanas Hospital (30 beds) provides adjunct general hospital facilities. Compton Sanitarium and Las Campanas Hospital are approved by the American College of Surgeons.

GLENN MYERS, M.D.
Medical Director.

Beverly Hills Sanitarium

for

The Study and Treatment of Nervous and Mental Diseases

218 No. Westmoreland DALLAS, TEXAS Telephone 9-3114

This sanitarium is a psychopathic hospital with a home-like environment and is equipped to treat psychiatric and neurological cases in a most scientific manner by means of phychotherapy, occupational therapy, recreational therapy and physiotherapy, including hyperpyrexia, insulin and metrazol treatments in special conditions.

ARTHUR J. SCHWENKENBERG, M.D.
Attending Neuropsychiatrist

ROBERT E. WINN, M.D.
Resident Physician

VOL. III JUNE 1942 NO. 6

EDITORIAL OFFICES
UNIVERSITY OF TEXAS SCHOOL OF MEDICINE
800 AVENUE B., GALVESTON, TEXAS

BUSINESS OFFICES
PHYSICIANS POSTGRADUATE PRESS
500 NORTH DEARBORN ST., CHICAGO, ILLINOIS

COPYRIGHT, 1942 BY
PHYSICIANS POSTGRADUATE PRESS

DISEASES of the NERVOUS SYSTEM

(PUBLISHED MONTHLY)

A PRACTICAL JOURNAL ON PSYCHIATRY AND NEUROLOGY

EDITORIAL COMMENT

American Psychiatric Association Meeting As this issue of the journal goes to press, members and delegates, speakers and invited guests, who attended the ninety-eighth annual meeting of the American Psychiatric Association at Boston, will be on their way home. Despite war conditions and the difficulties of travel the attendance was unusually good. Papers concerned with war medicine occupied an important place in the program. Round table discussions and symposia on subjects of interest were well attended. There was also a marked increase in the number of motion pictures shown. Apparatus for electric shock far outnumbered all of the other scientific exhibits. Many of the papers were concerned with electric shock therapy.

Among some of the papers concerned with this subject and presented at the meeting were: "Electric Shock in the Treatment of Schizophrenia and Other Mental Disorders" by Drs. Clarence A. Neymann, Vladimir G. Urse and John Madden of Chicago; "Electric Convulsive Therapy in Schizophrenia" by Drs. Lothar B. Kalinowsky and Harry J. Worthing of Brentwood, New York; and "Electric Sub-Convulsive Shock Therapy of Psychoses Associated with Alcoholism, Drug Addiction and Syphilis" by Dr. N. J. Berkwitz, Minneapolis.

Morale and Military Psychiatry were discussed by Drs. Alexander Simon, Washington, D. C.; Edward A. Strecker, Philadelphia; Roy D. Halloran, Waltham, Massachusetts; George S. Stevenson, New York City; Captain Robert W. Hyde, Boston; Squadron Leader H. D. Mitchell, Royal Canadian Air Force, and others.

Psychiatry in the United States Navy occupied an entire afternoon. Speakers on this program were: Commander U. H. Helgesson, Lieutenants C. L. Wittison, H. I. Harris, W. A. Hunt, P. S. Solomon and Ensign M. Jackson. The psychiatric program of the United States Navy and the neuropsychiatric selection of recruits were among some of the subjects discussed at this session.

Other sessions were concerned with: Convulsive Disorders, Forensic Psychiatry, Psychosomatic Medicine, Neurological Problems, Insulin Shock Therapy, Geriatics, Schizophrenia, Mental Deficiency and Social Science.

Joint sessions were conducted with the American Chapter of the International League Against Epilepsy, the Section on Psychoanalysis and the American Psychoanalytic Association.

The National Association of Private Psychiatric Hospitals held their annual meeting at the Statler Hotel on Wednesday noon, May 20th. Dr. J. K. Hall, Richmond, Virginia, President of the Society, presided at the meeting.

The 1943 meeting will be held at Detroit.

T. H. H.

Mechanics of Civilian Morale*

D. EWEN CAMERON, M.D.
Albany, New York

Dr. Cameron was graduated from the University of Glasgow Medical Faculty in 1924 and took postgraduate training in the Phipps Clinic, Johns Hopkins and in Zurich, Switzerland. He is Chairman of a Sub-Committee on Civilian Mental Health of the Military Mobilization Committee of the American Psychiatric Association and at present a Professor of Neurology and Psychiatry in the Albany Medical College. Dr. Cameron is certified by the American Board of Psychiatry and Neurology and is a member of the American Psychiatric Association.

During the past two years there has been an increasingly wide discussion of morale. Efforts have been made to define the concept of morale and to clarify the responsibility of the various social sciences and of other bodies with reference to its control. The actual administration of morale has been halting, and it is my purpose to discuss some of the causes and the mechanics of better application of what is already known.

The confusion which still exists concerning the responsibility for the maintenance of morale accounts to an appreciable degree for the inadequacy with which this problem is being met. It would seem logical that representatives of the sciences concerned with the study and control of human behavior should undertake this task. Two major difficulties have stood in the way. The first is that the social sciences are comparatively recent cultural developments. The manipulation of morale, on the other hand, can be traced back as far as written records go. The soldier, the churchman and the politician have from the most remote times endeavored with varying success to raise the morale of their followers and to impair that of their adversaries. During the present crisis numerous groups drawn from the ecclesiastic, military and political fields as well as from other sections of the population have again come forward with plans for the raising of morale. This has occasioned a great deal of confusion and there has been much working at cross-purposes.

The second major factor in the failure on the part of the social scientists to take rightful leadership in this field consists in their unpreparedness. The study of human behavior has been fragmented among these several disciplines in such a way that it is difficult for the workers in any one of them adequately to view morale with its extensive ramifications. The division of the study of human behavior into the investigation and control of the normal individual, the abnormal individual and into group behavior is academic and has very little value in the present situation. The psychiatrist knows something about the effects of fatigue, poor nutrition and chronic anxiety upon morale. The social worker knows of the influence of political corruption, of inadequate homes and of economic despair. The psychologist can contribute from his knowledge of the effects of morale upon individual output, and the sociologist has data upon the relationship of group solidarity to morale. Each group sees only part of the pattern and therefore is unable to deal with the whole field. Unfortunately, the social instruments which have been devised to permit of the integrated working of men in this fragmented field are still in inadequate stages of development.

These, then, are two reasons why the social sciences, and among them psychiatry, have experienced difficulty in dealing with our problem. Before discussing the means by which the social sciences can be brought to operate in the concerned field, let us consider what psychiatry can actually contribute. This falls under four main headings. First, is the concept of morale as a psychobiologic phenomenon. Particular importance lies in the fact that many of the groups now proposing to deal with morale are experienced only in limited aspects of the functioning of the human organism. None save the psychiatrist is trained in the whole range of functions.

Second, is the recognition that the incidence of psychoneurosis and the level of morale are intimately related. The experiences of the armed forces during the first World War and of these forces and the civilian population during the present war

---

* From the Department of Neurology and Psychiatry, Albany Medical College, Albany, N. Y.
Read before the Southern Psychiatric Association, October 6, 1941.

attest this fact. Where morale is low the incidence of the psychoneuroses is high. This is a most important relationship and its further elucidation may throw considerable light upon the mechanics of morale. Third, is the clarification of the fact that where the individual is well integrated in a group and where that group is actively participating in the common defense, morale tends to be high.

We already know that insecurity, frustration and conflict, either within the group or between individuals, tends to impair morale. Considerable control of these reactions can be established by setting up community groups, the function of which is to work for the common well-being.

To the above should be added the value of criticism directed toward the methods which were employed to raise the morale during the first World War. Morale at that time was conceived as a form of enthusiasm under the urge of which men might be expected to work and to fight with a determination and endurance quite beyond their normal limits. It was also believed that this enthusiasm was best engendered by connecting up the age-old appeals to patriotism and to the past traditions of the nation with the newly developed methods of publicity. The worker in the field of morale was primarily the public relations agent. In this country the work was carried out by the Committee on Public Information under the chairmanship of George Creel. In Britain a comparable position was held by Lord Northcliffe. Both were newspaper men and their staffs were chosen largely from those experienced in the various forms of communication. The immediate results of their methods were immense and probably far exceeded the expectations of those most closely associated with the work. The late results were negligible. The drive to raise morale was indissolubly related to the task of winning the war. When this was accomplished, the entire morale campaign ceased. Those ills which had formerly beset the community, the frustrations, the insecurities and conflicts returned at least in as severe a form as ever. Indeed, there is some reason to think that they were actually accentuated by the disillusionment which swept over the country threatening the actual results which were achieved by the last conflict.

It would be more than unfortunate if the same error were to be repeated. I feel that this last contribution is a major one. Psychiatry should insist that work in the morale field should not be carried out in terms of a publicity campaign. It should be carried out in terms of the improvement of the mental health of the individual and of the group.

Where an individual or a group is possessed of sound mental health, where insecurity, frustration and conflict are reduced to a minimum, there one has a group, active, aggressively enterprising, purposeful and confident. The capacity for exertion under stress is at a maximum. The ability to withstand setbacks and hardship is great and the incidence of psychoneurotic incapacities is brought to a low level. Once the crisis has passed and the community is relieved of the stresses under which it has labored, there is no such letdown, no such accentuated reappearance of former difficulties as is the case where morale is synonymous with an artificial whip-up of enthusiasm.

Let us review the measures which have been taken by modern states to preserve morale during the present period. Our knowledge of this must necessarily be limited by the circumstance that we must now rely on, the published records rather than direct observations. Material is available in regard to the steps taken by three nations who have been exposed to such stress as to provide at least a preliminary test of their morale measures. These are Germany, Great Britain and France.

The measures taken by Germany are characteristically thorough. Indeed, they appear to have had their origin in the profound disappointment over what was to the German leaders their incredible defeat in the first World War. During the 1920's studies of the psychologic factors involved in this defeat began to appear. There were detailed investigations of the war weariness and moral collapse of the people as well as of the fatigue and inability to make decisions by some military leaders during the last years of the war.

These studies were already pointing to the present conceptions of psychologic warfare when, in 1932, Hitler came to power. The Nazi philosophy permitted the introduction

on a wide scale of these revolutionary ideas of warfare. From the extraordinarily illuminating compilation entitled, "German Psychological Warfare," recently brought out by the Committee on National Morale one may see the tremendous scope of the measures which have been taken to assure sound morale.

German leaders early decided that steps to fortify morale should be taken before warfare actually broke out. To obtain maximum efficiency for this an integration between the social sciences and the government was effected which exists in no other country. In numerous publications one can trace the penetration of this newer education which was directed toward placing greater and greater values upon military qualities, upon the heroic past, upon the concept of Germany as the master nation and upon the fundamental virtues of unquestioning obedience and unswerving loyalty to the leader.

Studies were made and have been published of a great series of aspects of communal living, matters which elsewhere have barely been recognized as problems for investigation by the social sciences. Among these may be mentioned studies of the psychology of attack, of methods of dealing with the intellectual in the army, of the psychologic effects of gas warfare, of the problem of the soldier in isolated posts, of the effects of the appearance of different types of uniform on the soldier, of the value of terrorism and various other problems of great and small import.

The steps through which this information was put to work were first the progressive militarization of the national group. It was hoped that by rendering the population accustomed to a military way of life it would become conditioned against those changes which necessarily appear when a nation goes to war. Second, group formation was promoted and group consciousness heightened. Third, advantage was taken of the numerous semi-military organizations through which the individual must pass—the Hitler youth, labor corps and the army—to inculcate intensively the viewpoints to which we have already referred. Finally, an organization was created under the chief of state police to deal with irreconcilable elements both before and after the outbreak of war.

In Great Britain there has been considerably less extensive development of this field. Reliance seems to have been placed to a large extent upon the older methods of raising morale. National leaders have made appeals to patriotism and to revered national symbols. The various channels of communication have been utilized in a manner which though more restrained is reminiscent of that which obtained in the first World War.

There is very little reference to problems of morale in the British literature of the social sciences during the 1920's and early 1930's. During the latter decade a few scattered articles appeared. In 1938, a symposium upon panic in civilian populations was held, and Rickman urged the formation of small defense groups by communities.

At the outbreak of the present war a series of committees was set up to deal with problems of mental health. These committees, staffed by psychiatrists, social workers and those interested in child guidance have had as their main objectives, first, the mental health care of evacuated populations; second, mental health first aid in bombed areas, and third, the removal of chronic psychoneurotic individuals from dangerous sections. One of the most important steps seems to have originated from the joint efforts of the government, local communities and the social agencies. This consists in the organization of *small* local defense groups having as their function some aspect of the public warfare. These small active groups have contributed considerably to the stability of the population. Characteristically the groups should be *small* and center around an authoritative leader. The members of the group should be fully informed of the dangers which they may encounter and instructed how to meet them. Within the group the simple virtues of fairness and equality of effort such as are found within the family group, should be stressed.

Information concerning the measures taken to insure morale in France at the outset of the present conflict is limited. A report published in 1940 serves to demonstrate the fallacy of focusing attention on aims rather than execution. This report states that the morale organization in France was set up to attack three main objectives; first, to stop propaganda at its source by the traditional methods of censorship of mail and newspa-

pers; second, counter-propaganda, and third, combating idleness and boredom among the troops. These were laudable objectives but, as is now common knowledge, measures adequate for their attainment were never executed.

It is of value to note that there is no indication in the reports concerning morale organization in France of the participation of the social sciences, no evidence of reliance upon local community effort and no indication that there was an appreciation of the fact that psychologic warfare had made headway since the first World War.

Morale organization in our country, as was pointed out at the outset, is still inadequate. Fortunately, there are present in large measure two of the assets which have formed the basis of the German and of the British morale organizations. The first consists in the fact that as in Britain there is a strong tradition of local initiative and of community self-help. The second consists in the fact that in no country in the world is the personnel of the social sciences so numerous and so highly trained. In this respect there should be no difficulty in competing with the thoroughness of the Germans.

There is already some indication that the mechanics of morale in this country may be set up in accord with three main principles. I feel strongly that all possible influence should be brought to bear in favor of this.

The first is that the social sciences should participate extensively and that they can best do so when they work together in the closest cooperation, namely, when they work side by side in any given organization which may be set up. The second principle is that of the promotion of local effort and initiative. This is rapidly taking shape in the defense councils and in the local organization of civilian defense personnel.

Reports are coming in from an increasing number of areas concerning the growing appreciation of the fact that the set-up of a local defense council is incomplete without the inclusion of those groups which are concerned with the human side of the community. Psychiatrists, social workers, educators, and men and women from the service organizations of the community are being called upon in increasing numbers to cooperate with the work of local defense councils. Their cooperation centers around three main objectives: First, dealing with problems arising from the operation of the Selective Service Act; for instance, insuring that rejected men are handled so that their rejection will not constitute a psychic trauma. Second, instruction of lay groups, especially civilian defense personnel, in problems of human behavior likely to arise during periods of stress. Third, early detection and remedy of social and psychiatric problems arising from sudden expansion of defense industrial centers. Here we may mention the influx of unstable individuals, the increase of alcoholism and the strains placed upon the family by inadequate housing and recreational facilities in those areas.

The third principle is that of central organization. There is promise of this in the provision which was made for a division of morale in the Office of Civilian Defense. This central organization would be capable of integrating local efforts, transmitting information, arranging for uniform instruction and, most important, setting up means whereby continual investigation and research could be carried on.

We have now reached the point where we are squarely up against the problem of the mechanics of morale. The time for preliminary collecting of data and the working out of definitions is at an end. We have to face the business of putting what we know to work. If psychiatry, together with the other social sciences, can successfully deal with this matter of morale, we can expect increasingly to share in the reconstruction of social organization which is now going on and we can hope that thereby this reorganization will be carried out in terms of that knowledge of human nature and its needs which we are now beginning to gain.

The Relation of the "Reflex Response" to Total Behavior*

H. S. RUBINSTEIN, M.D., Ph.D.
Baltimore, Maryland

Dr. Rubinstein received his M.D. from the University of Maryland in 1928, interned at Sinai Hospital and did postgraduate work at the University of Maryland, the George Washington and Johns Hopkins Universities. He is a Diplomate of the American Board of Psychiatry and Neurology and has served as an associate examiner for the Board. He is Consultant in Psychiatry to the United States Public Health Service and carries on his research in the Surgical Division of Sinai Hospital. He is co-author of "A Laboratory Manual of Neuroanatomy" and has made many contributions to the literature.

The idea of the reflex as the functional unit of the nervous system originated about the time of Descartes in the 17th century.[1] The term as first used was applied to invariable and mechanical-like nervous activity which was unassociated with consciousness. Since that time the concept has undergone various revisions so that definitions differ depending upon the source examined. Herrick[2] defines the reflex act as an "invariable mechanically determined adaptive response to the stimulation of a sense organ, involving the use of a center of correlation and the conductors necessary to connect this center with the appropriate receptor and effector apparatus." Sherrington[3] also considers the reflex to be "the unit reaction in nervous integration" and defines the "simple reflex" as a grade of coordination which makes an effector organ respond "to excitement of a receptor, all other parts of the organism" being supposedly indifferent to and for that reaction.

Actually, however, such explicit delimitation of behavioral reactions are useful merely for purposes of analytic study. Sherrington himself states that "a simple reflex is probably a pure abstract conception, because all parts of the nervous system are connected together and no part of it is probably ever capable of reaction without affecting or being affected by various other parts, and it is a system certainly never at rest."

The work of Coghill[4] on amblystoma clearly shows the unity of reflex and total behavior, a fact also substantiated by Minkowski's[5–10] embryologic studies on the human fetus. Such reports, added to the observations of Bersot[11–14] concerning the variability of the plantar reflex, point to the domination of the organism as a whole over simple reflexes.

During development the organism reacting to stimuli at first shows a behavioral reaction which is total in appearance. This is clearly demonstrated by pinching the tail of the new-born rat as a result of which a generalized reaction, almost convulsive in nature, ensues. Only later in its development after a gradual process of maturation which leads to that unique specialization known as *individuation*[15] is the organism capable of displaying those partial behavioral patterns which are called reflexes. This process may be looked upon as a recapitulation of phenomena observed phylogenetically. For example, animals low in the scale of life such as porifera, coelenterates and echinoderms generally react as a whole to environmental changes, while higher animal forms may respond with reactions involving more restricted segments.

A reflex, according to any definition, may be simple or complex depending upon the number of accessory links placed in the chain (Fig. 1). If one wished to be all-inclusive, one could consider a reflex as that *series of neural events in which a stimulus acting upon a receptor either internally or externally to the organism sets up impulses which after passage through the central nervous system results in a response of an end organ.*

Since there are no known fundamental differences between the chemical, physical or microscopic properties of non-mental and mental regions of the brain[16] it is conceivable that this definition may include those activities concerning which one may be aware, i.e., *conscious*, as well as those phenomena concerning which the individual remains unaware, e.g., vestibular reflexes. Such a definition may also include delayed response (thinking before acting) as well as response arising only as a result of special training (conditioned reflexes). In brief, then, behavior in general may be regarded as a complex mechanistic phenomenon so that

* Laboratory for Neuroendocrine Research, Surgical Division, Sinai Hospital.

the difference between the simplest muscle twitch and the most highly integrated behavior may depend only upon the number of neurones affected and involved.

Each "reflex" pathway may therefore be considered as a functional unit only in the sense that within the limits of its structure it subserves a specific functional pattern of response. But through the gradual addition of internuncial neurones between the receptor and effector organs of originally simple reflex paths a degree of intricacy is finally reached which permits the organism to function as a whole.

No doubt some authorities will object to such mechanistic limitations placed upon behavior, especially if it includes those higher functions generally called consciousness. It then becomes the task of such dissenters to explain behavior in a non-metaphysical terminology based on soundly established scientific principles.

If one is really to include these higher behavioral functions in the category of *psy-*

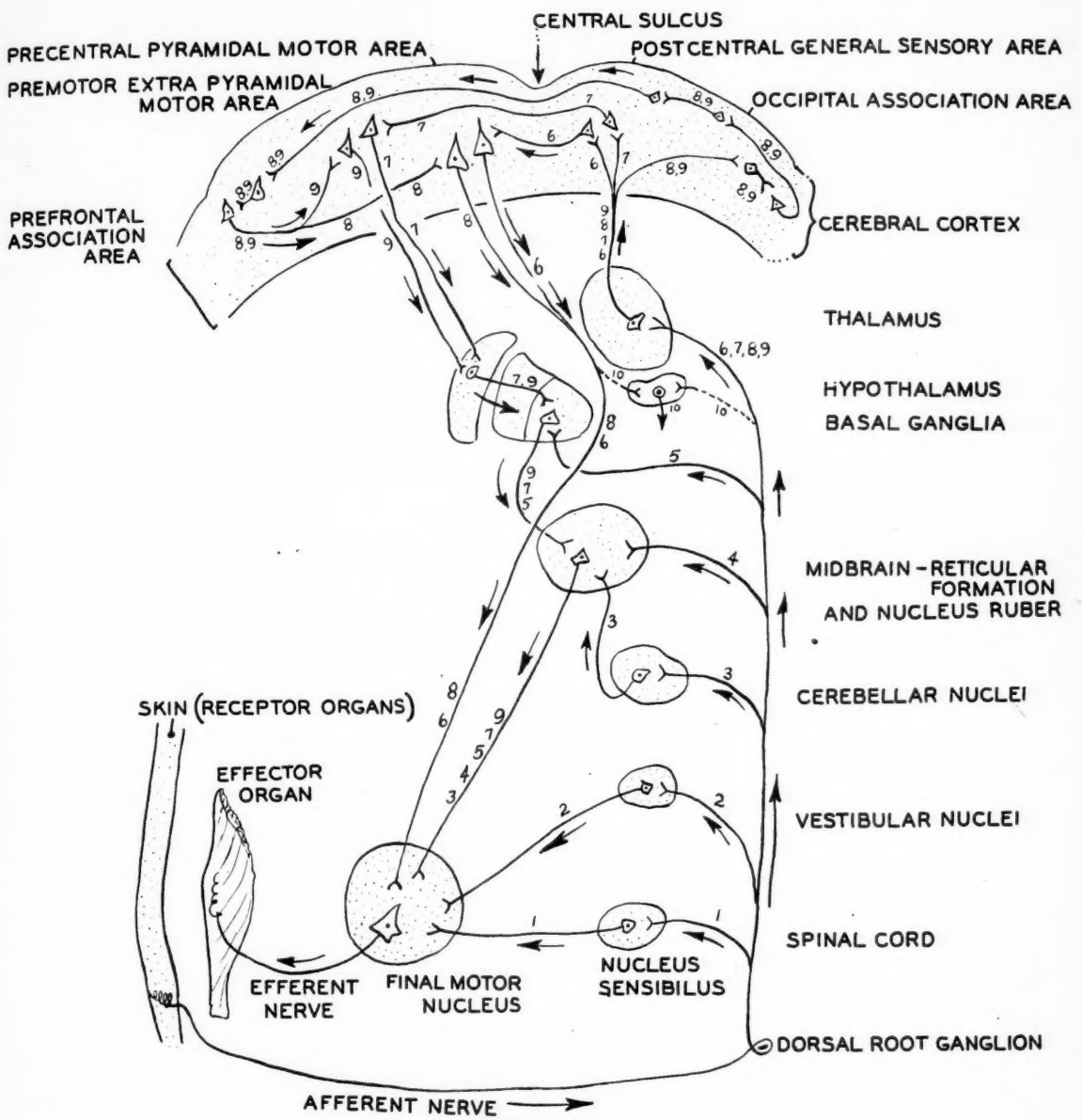

FIGURE I

Diagram illustrating the progressive intricacy of neural functioning. The reflex pathways may be traced by following their respective numbers through the arc. Thus, thalamic projections (6, 7, 8, 9) may lead to relatively simple pathways (e.g., a superficial skin reflex—No. 6) or to more intricate paths involving more complex associations (7, 8, 9). The figures 10 represent the possibility of hypothalamic involvement with impulses coming from lower or higher centers resulting in visceral and emotional responses.

chobiologic phenomena, then one must be willing to consider consciousness as the product of the highest mechanistic integrations of which the body is capable. To be sure, such integrations are limited and controlled by the constitutional or inherited neural patterns and influenced by the chemical, hormonal or endocrine substances. But the physical background must be there. It must be intricate enough so that when charged with sufficient neural impulses it results in that awareness called consciousness. The fact that consciousness is of a different quality than responses at lower levels of integration does not necessarily imply that it results from a different structural background. Its generation may only necessitate a more intricate structural pattern, but one which may qualitatively be the same throughout. Accepting this, the concept of consciousness as the product of the highest neural integrations takes on real meaning—and may be compared, as an end-product, to the intangible glare or the invisible rays which arise from such fixed and complex mechanisms as the ultraviolet lamp or vacuum tube charged with sufficient amounts of electricity. With a concept such as this, the line of demarcation between "reflex" behavior and the higher mental processes becomes less static. While it is true that Figure 1 is merely a diagrammatic representation of possibilities, it is still complete enough to make one wonder where "reflex" functions end and "higher" functions begin.

Actually, as observed by Sherrington and reiterated by Goldstein,[17] reflexes in the original sense only rarely, if ever, occur in the intact organism. One may, by tapping a tendon or by means of other suitable stimuli bring about what appears to be an isolated "reflex" response, but clinically at least one always deals with the organism as a whole.

References

1 Parker, G. H.: *Smell, Taste and Allied Sense Organs,* Phila., 1922.

2 Herrick, J. C.: *An Introduction to Neurology,* Saunders Company, Phila., 1928.

3 Sherrington, C. S.: *The Integrative Action of the Nervous System,* Yale University Press, New York, 1906.

4 Coghill, G. E.: *Anatomy and the Problem of Behavior,* Oxford University Press, 1929.

5 Minkowski, M.: "Réflexes et mouvements de la tete, du tronc et des extrémites du foetus humain pendant la premiere moitié de la grossesse," *Compt. rend. soc. de biol.* 83: 1202, 1920.

6 Minkowski, M.: "Sur les mouvements, les réflexes et les réactions musculaires du foetus humain de 2 a 5 mois et leur relations avec le systeme nerveux foetal," *Rev. Neurol.,* 37: 1105, 1921.

7 Minkowski, M.: "Sur les mouvements, les réflexes et les réactions musculaires du foetus humain de 2 a 5 mois, et leur relations avec le systeme nerveux foetal," *Rev. Neurol.,* 37: 1235, 1921.

8 Minkowski, M.: "Für Entwicklungsgeschichte, Lokalisastion und Klinik des Fussohlenreflexes," *Schweiz. Arch. f. Neurol. u. Psychiat.,* 13: 475, 1923.

9 Minkowski, M.: "Von gegenwartigen Stand der Lehre von den Reflexen in entwicklungsgeschichtlicher und anatomisch-physiologischer Beziehung," *Schweiz. Arch. f. Neurol. u. Psychiat.,* 15: 239, 1924.

10 Minkowski, M.: "Neurobiologische Studien am menschlichen Foetus," *Abderhalden's Handb. d. Biol. Arbeitsmethoden.,* Brochure, 253: 511, 1928.

11 Bersot, H.: "Variabilité et corrélations organiques. Nouvelle étude du réflexe plantaire," *Schweiz. Arch. f. Neurol. u. Psychiat.,* 4: 277, 1919.

12 Bersot, H.: "Variabilité et corrélations organique. Nouvelle étude du réflex plantaire," *Schweiz. Arch. f. Neurol. u. Psychiat.,* 6: 37, 1920.

13 Bersot, H.: "Développement réactional et réflex plantaire du bébé né avant terme a celui de deux ans," *Schweiz. Arch. f. Neurol. u. Psychiat.,* 7: 212, 1920.

14 Bersot, H.: "Développement réactional et réflex plantaire du bébé né avant terme a celui de deux ans," *Schweiz. Arch. f. Neurol. u. Psychiat.,* 8: 47, 1921.

15 Coghill, G. E.: *The Early Development of Behavior in "Amblystoma" and in Man*—in Readings in Psychology, edited by R. H. Wheeler, Crowell, 1930.

16 Sherrington, C. S.: *The Brain and its Mechanism,* Cambridge Univ. Press, 1934.

17 Goldstein, Kurt: *The Organism,* American Book Company, New York, 1939.

Physician Drug Addicts*

M. J. PESCOR**
Fort Worth, Texas

Dr. Pescor graduated from the University of Wisconsin Medical School in 1930. Since graduation he has specialized in psychiatry, receiving his preliminary training at St. Elizabeth's Hospital, Washington, D. C. In 1923 he became affiliated with the U. S. Public Health Service, and is now Clinical Director at the U. S. Public Health Service Hospital, Lexington, Kentucky, which is devoted to the treatment of drug addicts. Dr. Pescor is a Fellow of the American Medical Association, the American Psychiatric Association, and is a Diplomate of the American Board of Psychiatry and Neurology.

The proportion of physicians among the drug addicts admitted to the U. S. Public Health Service Hospital in Fort Worth, Texas, is approximately eight times greater than that of physicians in a comparable general adult male population. In other words, drug addiction appears to be a definite occupational hazard among physicians.

There are at least two reasons for this hazard. First, the medical practitioner knows what morphine can do. He knows that if he has a pain, morphine will relieve it. He knows that if he cannot sleep, morphine will bring sleep. He knows that if he has been indiscreet, morphine will relieve his alcoholic hangover. He knows that if he is nervous and jumpy before an operation, morphine will steady him so that he can carry out his task. He knows that if he is weary, morphine will perk him up.

The second reason is that the physician always has available a supply of drugs. He does not have to seek another physician to prescribe for him, nor does he have to contact a "bootlegger." It is simply a matter of taking a tablet or two of the drug from his office supply and charging it up on his books as wasted or as having been prescribed for one of his patients. Eventually, the narcotic officers discover the peculations, but with a little care the physician can cover up his activities for quite some time.

The U. S. Public Health Service Hospital at Fort Worth, Texas, received its first patients on November 7, 1938. Since that time 47 physicians have been admitted for treatment of drug addiction. What are these physicians like? Perhaps the best way to describe them is to give a case history of an imaginary physician composed of averages and highest frequencies for various factors in the clinical records of the entire group.

This composite individual is a 52-year-old white male who began using morphine at the age of 39 for the relief of some painful or distressing physical condition. He confined himself to the use of morphine, about eight grains daily. During the 13 years of his addiction he voluntarily sought a cure in sanitaria on three occasions. He also had one compulsory cure in a penitentiary where he was sent for violation of the Harrison Narcotic Act. The longest period of abstinence after any of these four cures, however, was a few months less than three years. Relapses occurred through the alcoholic route or through the original mode of addiction.

He was arrested for the first time in his life at the age of 45 on a narcotic charge for which he was sent to the penitentiary. He had no delinquency record prior to addiction. After addiction he ran afoul of the law only because of violation of the Harrison Act. Currently he is a voluntary patient at this hospital.

His family history is positive for psychopathic determinants such as alcoholism, psychoses, neuroses, drug addiction, and suicide. He was brought up in an intact home, reared by both parents in a congenial atmosphere. His parents were in comfortable economic circumstances.

His personal history indicates that he is a native of native-born parentage, brought up in the Protestant faith, but not a devout church-goer as an adult. He made a normal childhood adjustment, graduated from an accredited medical school and spent his life in the general practice of medicine in a small urban or rural community. He made a comfortable-to-good economic adjustment even during the period of his addiction. He is married and has two children. His social adjustment was good prior to, but not after

* Read before a meeting of the Texas Neurological Society held at the U. S. Public Health Service Hospital, Fort Worth, Texas, May 12, 1941, and published in the February, 1941, issue of the Tarrant County Medical Bulletin.

**P. A. Surgeon, U. S. Public Health Service.

addiction.

His past medical history reveals the usual diseases of childhood without complications. As an adult he has been troubled with diseases of one of the major systems—circulatory, genito-urinary, gastro-intestinal, or respiratory. Admission physical examination disclosed poor dentition, defective vision, and very likely some disorder of the circulatory or genito-urinary system. Blood serology was negative. His mental age was found to be 16 years. He was given a diagnosis of Psychopathic Diathesis which means an uncrystalized personality defect short of actual psychopathic traits. His prognosis for cure was considered guarded.

During his stay in the institution he was cooperative and got along quite well with the institutional officials. He was inclined to feel a bit superior to other patients because of his professional training but did not flaunt this superiority to the point of antagonizing his fellow patients. At first he was assigned to non-professional out-of-doors work to which he applied himself diligently. During the latter part of his stay in the hospital he was given some professional work in order to prepare him for his return to private practice. He left the hospital in better health and with the realization that he could live without drugs despite any chronic infirmities which he might have.

Follow-up studies of the physicians who have been discharged from the institution show that 50 per cent who have been out six months or longer are still off drugs, 27 per cent have relapsed. The rest are dead or unheard from. Two committed suicide.

The typical physician addict differs from the typical ordinary addict in the following respects:

1) The average age of the physician addict is 52 in contrast to 39 for the ordinary addict.

2) He is a voluntary patient rather than a prisoner.

3) He began using drugs at the age of 39 instead of 27.

4) He began using drugs for the relief of a painful or distressing physical condition in contrast to simple curiosity and association.

5) He confined himself to the use of morphine instead of using many narcotic drugs.

6) He has been an addict for 13 years in contrast to 10 years.

7) He has made at least three attempts at voluntary cure, while the ordinary addict has made none.

8) He remained abstinent for 32 months after his most successful treatment, in contrast to 24 months for the ordinary addict.

9) He relapsed for medical reasons or through alcoholism instead of through association with other addicts.

10) The physician addict was arrested for the first time at the average age of 45; the ordinary addict at the average age of 28.

11) His parents were in comfortable economic circumstances in contrast to marginal.

12) He has a college education; whereas the ordinary addict has an eighth-grade education.

13) He comes from a small city or rural section rather than a large metropolitan area.

14) He was able to earn sufficient income to support himself and his habit in contrast to the average addict who had to supplement his income through illegal methods.

15) He is happily married and has two children, whereas the ordinary addict is divorced and has no children.

16) He has a mental age of 16 years; the ordinary addict has a mental age of 13 years 8 months.

17) Upon release he has his practice to look forward to, while the ordinary addict has no prospect of employment.

Obviously, the physician addict has certain distinct advantages over the ordinary addict. He has a profession, he has a home, he is better educated, his professional knowledge should give him better insight into his problems, and he is in better economic and social circumstances. Yet, despite all these advantages, he is little, if any, better prospect for cure than the ordinary addict.

Acknowledgement—This study was suggested by Dr. W. F. Ossenfort, Medical Officer in Charge of the U. S. Public Health Service Hospital, Fort Worth, Texas.

Practice of the College Psychiatrist

MARGARET R. ANTHONISEN, M.D.*
Wellesley, Massachusetts

Dr. Anthonisen was graduated from the University of Manitoba, Winnipeg, Canada, in 1924 and interned at Winnipeg General Hospital. She spent four years doing research work at the University of Manitoba, the University of Toronto, and Johns Hopkins University. Dr. Anthonisen received her psychiatric training at Sheppard and Enoch Pratt Hospital, the Henry Phipps Psychiatric Clinic of Johns Hopkins Hospital. At present she is Consultant in Mental Hygiene at Wellesley College.

College psychiatry is twenty years old. In the 1920's those interested in the applications of dynamic psychiatry wrote of mental hygiene in colleges with the hope that alleviation of conflict states in adolescence might improve personal happiness and efficiency, and decrease the incidence of later mental disorder, in those socially and intellectually valuable people represented by the college population.[1] Then personnel administrators, college physicians and psychologists, largely through surveys by questionnaire or examination, collected ample evidence of conflict states in ten to sixteen per cent of observed students.[2] Psychiatrists who wrote of the college experience in the lives of their patients, gave it considerable value as an activating phase in the evolution of their difficulties.[3]

The nineteen-thirties has been a decade of practice in college psychiatry with various recordings of samples. The present paper is one of these; namely, six years of psychiatric practice in a women's college and a comparison of it with that of other schools, primarily with the University of Michigan[4] and Harvard University.[5] These were chosen because they represent the contrast of a coeducational and a men's school, and also because the psychiatrists at these schools have published comparable data. Where data from other schools[6] have been found, they, too, have been used in the comparison.

Such a summary of college psychiatry may not be amiss, for in its third decade, as the papers of DeBarry,[7] Murray,[8] and Palmer[9] show, the trend is finishing with the systemic and statistical side, and is proceeding with description and analyses of those clinical entities characteristic of college practice.

In 1926, Wellesley appointed an assistant to the resident physician with duties as part-time psychiatrist. In 1934, a nonresident psychiatrist was brought in for consultation work twenty hours a week. To meet the increasing case load, hours were increased to thirty a week in 1936. Actually, these hours are formal description. A college psychiatrist, like any other physician, has to meet the patient when he is sick irrespective of hours. In the six years 1934-40 the case load has more than doubled, and at the same time there has been a shift from fewer cases seen more frequently to more cases seen less frequently. In 1934-35 twenty-eight cases were seen once, four seen 46 to 64 times; in 1939-40 seventy-five cases were seen once, and four 29 to 38 times. There have been two reasons for this shift. One is the increasing case load and limited time, and the other is the selection of cases going from treatment attempts with the more neurotically handicapped, to study of students in academic difficulties. The latter group presents a considerable number of personality problems, but of less involved type.

Our 754 patients represent 10.9 per cent of the student population and were seen by the psychiatrist an average of 6.4 visits each. Visits were fifty-minute interviews. In Michigan's study of its class of 1934, 588 students were seen an average of 8.4 times each by the psychiatrist and, presumably, by his lay assistants. At Harvard 196 students (1937-38) were seen for 4 visits each by members of the psychiatric clinic's staff.

The distribution of students by classes shows preponderance of freshmen both yearly and per class. This one would expect on grounds of age and because of college as a new situation. Relative to the age factor, Hymanson[10] has considered the high morbidity and low mortality that characterized adolescence to be related to the stress of emotional factors at that age. Chambers[11] has shown that with maturity there is a decrease in the number of borderline acts that seem wrong, a decrease in the number of things worried about, and that interests show

* Wellesley College.

at first a slight narrowing, then change in type followed by broadening. Boys make this shift at the beginning of high school and girls at the beginning of college. He further asserts that girls have greater difficulty freeing themselves from childish attitudes and forming their own moral standards and interests. A decrease in the number of students seeking help in the higher years indicates the operation of time and age factors in adjustment.

This same general distribution is true of other schools (Table I). Michigan and Harvard, having larger graduate departments, show higher figures for this group. The extraordinary figure for Harvard is evidently contributed to disproportionately by the law school.

Table I

COLLEGE STATUS WHEN FIRST SEEN

(Percentage of cases studied)

	Wellesley 1934-39*	*Vassar 1923-28*	*Univ. of Mich. 1930-34*	*Harvard 1937-38*
Graduate	3%		16%	48%
Senior	11	18%	16	6
Junior	17	21	20	10
Sophomore	28	26	18	12
Freshman	37	35	27	24

* 4% of patients seen were faculty or staff members.

Students are referred to the psychiatrist mostly by the medical staff and the deans. Whether they accept the services is left entirely with them. There has been a gradual increase in the number of students who seek consultations on their own, or on the advice of fellow students.

To get comparisons with other schools, sources of referrals had to be condensed by putting college administration and family sources together (Table II). It is perhaps unfair to quote Fry (Yale University) in this way. His division of referrals into three equal thirds was made in a talk to Freshmen Counsellors[12] and is likely a rough general estimate. His unit is the oldest and in any case has the largest number of patients seeking aid on their own. Our 45.2 per cent referrals from college personnel and home (very little from the latter) indicates that our setup is unique in the extent to which it is used by the teachers and administrators of the college, while that of Harvard and Michigan is much more frequently used by the medical department.

Table II

REFERRALS

(Percentage of cases studied)

	Wellesley	*Michigan*	*Harvard*	*Yale*
Medical Staff	34.3%	69.5%	67.8%	33%
Self	20.5	17.6	10.2	33
College Teachers and Officers	45.2	12.8	22	33
Home				

In classifying cases in this type of practice one is confronted by the fact that the largest group of the patients one sees, does not fit into any of those diagnostic categories of general psychiatry. I have labelled these "concern states." Some specific topic has become a focus for uncomfortable preoccupation—"my parents are getting a divorce—I wonder how I should act with them and with their separate friends when I get home"; "I have to take the required course in . . . . I am not interested and I can't get to work at it"; and, "the group I room with is tired of me and I have no other friends."

For the other cases, I have found most useful Adolf Meyer's concept of disorders as reactions that affect the personality in part or as a whole. Of the former, one has the student who, in situations of stress, habitually develops anxiety which attacks some vasovisceral arc of outflow. She may have headaches, palpitation, dizziness, faintness, gastrointestinal cramps or vomiting. Another part personality disturbance is seen in the girl who is seriously pressed upon by social competition, feels she cannot hold her own in conversation, appearances or sophistication. The dining hall becomes a danger spot. "Will there be anyone to sit with? Will I have to talk?" Fear of the dining room develops, then avoidance of it, with all the ritual of a classic phobia. And still another is the student in whom old conflict produces a

chronic outflow of resentment which filters through present associations with contemporaries showing itself in apprehensive, critical attitudes, keen competition with delight in beating the other fellow, and in angry hurt withdrawal when someone else is more successful. Such are the personality problems shading into more complicated and extensive developments as character neuroses. A typical example is the following:

The patient spent a long period, at the birth of her year and a half younger brother, in the home of an elderly maternal aunt. On returning to her own home she was very jealous of the baby, and hard to manage. So she went back to her aunt's home and stayed there as an only child for summers. On each return she felt that her parents and brother were the family and she an unwelcome outsider. She was negativistic to her mother and aggressive to her brother. She felt her mother's reports of her naughtiness alienated her father, too, leaving her with no one's love and the feeling that she was an inferior person. She had no fondness for anyone in her family and felt guilty about this as she compared herself with others. All through school and college she has followed compulsively the following pattern. She is suspicious and distrustful of people, expecting their dislike. If people, usually a person, as she cannot manage contacts with more than one at a time, show any positive attitude to her, she begins testing them with teasing and defiance, thereby succeeding in turning them away. If they remain neutral, she watches, convinced they do not like her, and withdraws; or she picks up with some conspicuous underdog, and is discarded. Whatever success she attains, and she is very able, she repeats a similar succession of moves, pulling down the house upon her head. In the resulting loneliness and frustration she has often thought of suicide.

All of these part-personality disorders, visceral symptoms, phobias and character anomalies, have here been classed as neuroses.

The whole personality disorders, elation and depression of mood, and persistent distortions of thinking, such as progressively influencing suspicions, or hypochondriasis going over to delusion formation, have here been considered as psychoses. This they are in structure, but not to the degree usually meriting the term or rating hospitalization. For this reason it is not possible to compare the findings herein recorded with the mental disease rates in the general population. These latter are computed from admissions to mental hospitals. Actually, in this college one or two cases a year have had to be hospitalized. Often acute episodes can be satisfactorily managed in the college infirmary, which finding agrees with that of Michigan.[13]

The following three cases exemplify the types of depression, elation and distortions of thinking one finds in college practice:

Depression—The daughter of a government official grew up as the indulged and beloved child, whose unhappiness from the baiting of two older brothers was compensated by her status with her father. Her adolescence was punctuated by conflict of her pleasure assertions with his disciplinary moves. The latter were presented as, "if you are an intelligent person, you know that what I say is right." She came to college on the terms of the latter. Though reasonably endowed, she never consistently carried work through adequately. The threatened academic failure in the spring of her junior year was reacted to by a drop in spirits. Then came default of her fiancé with whom she had been having sexual relations. She wanted to leave college but dared not for fear of her father's displeasure—the expectation of which was quickened by the fact that he was due to return after a long absence.

A party with some mild drinking precipitated an outburst of weeping and lamentation and this led to infirmary admission and psychiatric care. Three weeks more of stumbling work saw a classic depression develop—progressive loss of sleep, appetite and weight—slowed reaction time, comprehension and concentration; mood was described as "down and discouraged," and content of thinking consisted in self-devaluating, repetitions of the conflict situation and talk of suicide. Three weeks more of infirmary care showed transference phenomena, fair insight and some improvement in symptoms. Her parents' arrival was marked by increase in the depression, guilt for their solicitude and silent antagonistic behavior towards them.

Treatment in a clinic was recommended and refused. Six months later the patient called. She had spent the interval living with her

parents, distracting herself with a busy social life and alternately quarreling with, and acquiescing to, her father. She was still depressed, though less so, had been drinking a good bit and looked dissipated. A year later she had recovered; had made a cynical adjustment by devaluating everything, but the dissipation was gone. Just following this, she married a man of the same professional group as her father, brothers, and the earlier fiancé. She remained well for the four years her case was followed up.

Elation—One of twin daughters of a family which ranked high in its community continued in college to live out her old pattern of competition with her sister. They were about equal in ability, though dissimilar in interests and the sister had always been regarded as more stable and more easygoing. Initial comparisons in college created some anxiety in the patient with overcompensatory social assertions. The latter brought criticism of contemporaries and reproof from elders. Activities increased with excitability and speeding of movements, thought and talk. Written work became scattered, with much irrelevant content. In classes she interrupted other students and went off on tangents in discussion. She smoked excessively, ate little and irregularly, and slept little. She complained of extreme tension. As seen frequently over a three-month period she was very restless and talkative, highly distractable and unable to entertain any but her own views. She said she felt fine—the only trouble was with the stodgy people who did not understand her; but her anxiety was evident and she constantly sought the psychiatrist's attention and approval. As insight for her condition was given to her environment and as she found some security in her relationship to some of her teachers and to the psychiatrist—she gradually improved, made good her lost time, and finished her year successfully.

Distortion—The patient was the eldest of four children of a high school principal. She was seen early in her freshman year because of painful self-consciousness and fear in all phases of her college life.

The mother in regretful anxiety for her youthful and economically uncertain marriage lived in intense overcompensating activity. She covered her resentment of her first child, the patient, with marked solicitude. The child presented the chronic feeding difficulty of refusal. Sphincter training was complete at eight months. The child's initial jealousy of her younger brother was early replaced by fondness for and identification with him, openly wishing she were a boy. She hated both younger sisters and her aggression towards them completed her mother's rejection of her.

The patient was a sullen child, who in her father's words "fought the world since she was two." In the immigrant community where he was school principal she was unable to make friends, but was dominated by a six-year older girl. A move to a larger community when she was nine was followed by gestures of participation with others, but always with underlying anxiety that she was not liked, that she was thought queer and abnormal.

The patient was unprepared for her menarche (age 11); she reacted with fear, and fainted. She was scolded by her mother and concluded that menstruation was another of her unique peculiarities. Not until years after did she believe that other girls menstruated. She has always resented her periods and been depressed before and during them.

In high school some interested teachers helped the patient to group associations. In these she was distrustful and often broke up rapport with single individuals alleging that such person really liked someone else better.

In her first two years of college, relations with older women teachers were strained, relations with fellow students were few, and frequently became one-sided "crushes" accompanied by marked tension states. In one of these, at the end of the second year, she had a panic; her eyes got still and glassy, her face became stiff. It happened when the current subject of her affections sat at a table beside her. She was sure this girl did this to her, watched her while it was happening, and that everyone present saw it. Infirmary care tided over this crisis.

In a different dormitory the next year, and at cost of much anxiety and transient paranoid ideas she got into a group of girls who dated a good deal and very competitively. To keep up with them, she let her work go and got into minor disciplinary incidents. Repeatedly, she thought teachers were against her. She had two panics: one, right after

criticism from her group of girls, in this one she thought she was going insane; and a second, when on almost delusional grounds, she thought she was pregnant, and was sure that her dressmaker and one of the college doctors looked at her enlarging abdomen.

Academic difficulties suspended her for a year. In this time she was employed in her home town where friends were impressed with how much happier and more sociable she was.

She was in college a final year before successful graduation. She called on me only once and with unusual ease discussed her relationship to a boy friend and only indirectly evidenced uncertainty as to the sincerity of his interest.

For comparisons with other schools (Table III), it was necessary to make some simple shifts of categories, e.g., with Raphael's material I have taken the liberty of putting all depressive reactions together; with Fleming's material—cases not diagnosed as psychotic, neurotic or organic—but as "problems" of one sort or another, I have called concern states. This Dr. Fleming considered a sound parallel to my case grouping.* The slightly higher percentage of psychoses given by Palmer at the University of Pennsylvania can likely be accounted for by his freshman questionnaire finding the sicker students, and the use of the personnel division to care for students concerned about academic work. Tillotson's even higher figure for psychoses in his survey year at Harvard, he accounts for in part by his own freshness from hospital practice, and because in its first year the clinic took care of a number of longer-standing questionable cases.* My own first year figure was disproportionately high for the same reasons. Apart from these, the general agreement in the types of cases reported from the different schools is quite evident.

A quantitative summary of problem material was compiled from the final analysis of each case studied in the six-year period, and represents the percentage frequency of problems coming under each of the given headings, in all the cases studied. A discussion of each of these headings follows:

Academic

From the high school preparation of the student there emanates a series of difficulties brought to focus in the freshman year. It seems that many secondary schools do not lead up to the point at which college work begins, both generally and in certain specific fields. Modern languages exemplify the latter. A student may be in despair, "I got good marks in French in high school; now despite my work I do badly." So often it means that her previous education has utilized only visual and kinaesthetic pathways, and that she is now trying to train auditory and vocal mechanisms without adequate time allowance. While a defect in the background of knowledge may exist, it does not produce so much difficulty as the fact that the college students, being on the whole the brighter ones in high school, have been up against little real challenge and have not learned habits of work, methods of work, or adequate use of time. These they must acquire and keep pace with freshmen studies concurrently. Frequently time is lost before the student realizes,

* Personal communication.

Table III

TYPES OF CASES

(Percentage of cases studied)

	Wellesley	*Vassar*	*Univ. Michigan*	*Univ. of California*	*Univ. of Pennsylvania*	*Harvard*		*Yale*
						T.[5]	F.[5]	
Psychoses	12.4%	12	13.1	13.2	15.5	26.8	49	45
Neuroses	35.1	27	40.8	40.7		35.4		
Concern States	50.2	61	42.9	46.1		37	34.7	55
Organic	2.2		3.1			0.8	3.5	

or is brought to realize, her situation.

Another liability from preparation is the more extreme types of progressive school, not because the student does not know what she needs to, but because of her critical disapproving attitude to the more conservative methods she must use in college. Once this resistance is overcome and the making of comparisons is stopped, she usually does well and appreciates college work, provided, of course, that no other trend capitalizes this resistance.

What I have for convenience called the ability-drive ratio has several troublesome variants; namely, uncompensated limitation of either drive or ability, and the special outcome of an ill-chosen study in the light of given drive or ability. Concerning the former, selection for admission assures adequate intelligence, so that it is usually the drive factor which accounts for success or failure. As of all drives, those which take a girl through college are mixtures of pleasure and necessity in their meaning to the individual personality. For some students intellectual pursuits are a lure and for others they are a means to an end—scholarship may be for its own sake or for some special use. But there is many a student in college for whom it is neither. For them college is to give a cultural background for personal and community life, to give social prestige, and the immediately interesting experience of campus life especially its extracurricular social aspects. These are well socialized motives, and the girls presenting them are usually those with good social assets. They are the type of women who may sit on governing boards of schools and social agencies and decide whether their more scholarly fellow-alumnae may hold their jobs. When their ability range is high, they do well anyway, but if it be below the median (Scholastic Aptitude Test score below 500), it is not the drive to carry the hours of concentrated work needed for success.

The less adequate types of drive are seen in the more immature students, as those who come to college because it is the thing to do, in accordance with social custom, family tradition or parental wish. Sometimes parental wish has only been carried through because the student had no better alternative to suggest for herself, or just wanted to get away from home. Sometimes it is the expression of the family's social or cultural ambitions. In any case, external pressure and its repercussions in the student's conscience-system is a poor set of motives with which to meet competition and to sustain long-time effort.

The more specific difficulties in ability-drive relationship can be illustrated as follows: A girl strongly motivated by humanitarian interests, and preparing to devote herself to good works, via social service, majored in sociology. Its third grade courses consist in scientific studies that required insight and growth on her part if drive and interest were to be maintained. Another student's father, an engineer, planned his daughter's education as he thought fitting for a woman—literature, art, and the like, but she was an unimaginative, fact-minded person like himself, and very much identified with him in interests and outlook. She failed this group of studies, but did very well as a science major. Still another student with poor mathematical but good language ability was trying with considerable difficulty to experience the "mind training" which her father had had from mathematics, Latin, and philosophy in a Jesuit-staffed school.

A large number of academic problems hinge on a vicious circle of anxiety. The start-off insecurity may be the uncertainties implicit in the new and competitive situation, it may be threatened, imagined or sampled failure, or it may be the rekindling of old fears in a neurotic character. The student's usual reaction is to work harder—often enough with overconscientious pursuit of detail, indiscriminate reading, and attempts at memorizing. She may begin to doubt her ability so that her attention is divided between her studies and concern about end results. This in itself may activate old conflicts around self-esteem and parental ideals. She usually becomes frightened of class recitations, suppressing even useful and adequate responses. Examinations become a scale in which her very worth is being weighed. These tests are then met with augmented anxiety. Between increased work and worry, late hours become habitual, fatigue results with inattention in classes and more work needed to fill the gaps. The accumulating fatigue and concentration difficulty produce poorer work, and therefore greater danger of failure and more anxiety.

As the vicious circle continues unconscious defenses assert themselves. It may be sympathetic-autonomic outflow, evidenced by insomnia, weepiness, indigestion, vomiting, or attacks of dizziness and faintness. Another common end result is staleness, and aversion to studies, then apathy. The student may drag around through the motions of classes and studying, but really does not care. In others avoidances and substitute activities are established: classes are cut while various other tangents, pseudo-art, reforms, religion, or athletics are cultivated.

Specially susceptible to the anxiety cycle are those sensitive students, with a not too certain ability margin who are under the necessity of maintaining scholarship subsidies. Often they are daughters of teachers and clergymen. They have high standards and ambitions, and frequently have limited means. They have been ear-marked in their communities by their father's positions, kept a bit conspicuous and a little apart from the group under the obligation of "being good." Failure is a special threat to them.

Similar development of the anxiety cycle is seen in students for whom compulsive work is being unsuccessfully used as a conflict block, or as compensation for social inadequacy.

Lastly, there are those students who carry unconscious complex-determinants which seize upon some phase of college life or work for expression. Their poor work is often an entire mystery to themselves, their friends and instructors. The following is an example: the only daughter of a surgeon successively failed courses in zoology for no obvious reason. She had been brought up in relative isolation with very superior prejudices. Emancipation had been retarded only to go ahead rapidly when she got away from home. Mixing freely with contemporaries for the first time led her to the conclusion that she had missed a lot of fun heretofore. She resented this and blamed her father. Her own social explorations led her to refute many prejudices, her earlier acceptance of which she attributed to him. Zoology to her was a medical study, her father's profession, and she would have none of it, nor would she please him by succeeding in it. Eyes to the book were an empty ritual.

Those problems grouped as social include the extremes or too few or unsatisfactory, and too many or compromising social contacts. The former are much more frequently encountered than the latter—about four to one. This group also includes courtship and marriage problems and dormitory situations of difficulty. The most arresting problem is that of the poorly socialized students. They are not the constitutional introverts who go their own way in their own world, but are rather relatively isolated persons whose seeming introversion is a defense move dictated by shyness, self-consciousness or inferiority feelings and from this wall-in they enviously watch their fellows. The set-up of the freshmen dormitories puts these personalities under considerable stress. They may be peripheral hangers-on to those primary groups formed about some sort of congeniality; or several of them will be thrown together in secondary pressure-formed groups. They are usually unhappy, often work badly and either become conscience-burdens to the better socialized students, or butts for the teasing of the more aggressively inclined. Dormitory problems often center about these poorly socialized students.

Too limited opportunities for the society of men is a rather frequently mentioned complaint. The significance of this may be appreciated by the following survey of the student population. A study of 1395 students in the twelve weeks, from January to March, 1939, showed:

17% had more than 12 dates
32% had 4 to 11 dates
32% had 1 to 3 dates
19% had no dates

Immaturity is a very relative term. In upper and middle-class girls of seventeen to twenty-two years of age, one expects to find a fair number of immature persons. But here this term is used to cover essentially retarded transition socially and emotionally from the dependence of childhood to the relative independence of adulthood. This immaturity is exemplified by floundering in the care of the self and in meeting external requirements, inability to make decisions or responsibly stand by decisions made, the acceptance of the immediate as against the long-time goal, and the need of ego-support from the environment, as the attention or loving interest

of nearby adults. Analysis of cases featuring this problem sorted out the following associated factors: overprotection by parents, status of only child or youngest child, multiple parents, overindulgence, and isolation with adults. Children brought up in foreign countries were frequent examples of this last.

As the college experience progresses, two types of immaturity come to light, one which seems to be related to lack of experience, and the other to be dependent upon attitudes fixed at an earlier period of life, and akin to the character neuroses. The following two cases illustrate the contrast:

Because of her father's invalidism this first student's family lived in social isolation. Through the mother's influence plain living and high thinking were carried to an extreme. Long commuting to a good private school gave the patient little opportunity for contemporary company. Her unique lack of decorative assets in clothes and manners made her the "odd child." Her reaction was one of bewilderment. Stealing of colored beads, and cloth, and of candy (they were such new and interesting things!) left her even more to herself. When she reached high school she was going her own way asserting the rightness of her type of difference. A specially interested teacher got the patient's acquiescence to the idea that if she had her right to be different, so had others, even though their differences were more like each other than like her. By the time this patient got to her freshman year in college she had dropped her defenses and gradually used the opportunities of the new social group very effectively, being active in athletics, finding place with the more serious girls in her dormitory and using common interests from work for other friendships.

The second student is the first child of a father who was the only child in a clan of admiring relatives. The patient was born and spent her earlier years in the home of paternal grandparents where great grandparents and an older maternal aunt also lived. She played an individual and unique role to these seven adults, and was exposed to criticism and test performing by all but her mother, upon whom she has remained quite dependent.

Throughout school she was an able, ambitious girl uninterested in any relationship with classmates except in dramatics. She would only play leading parts but did these very well.

In college she works furiously hard, stands in need of much attention from older people, has few friends, talks about herself exclusively and is now progressing with promise to professional work in dramatic art.

The more one goes into cases genetically the more frequently do family problems appear; but even in superficial work-ups they are obvious enough. The highest counts in the cases of this study are on the following topics:

Interparental friction, from silent disagreement through various expressions to separation and divorce;

Dominant parent, operative through early character formation, by role in the emancipation crises, or both;

Sibling rivalry, so often the older sister and younger brother combination, or sisters who have grown up as reciprocal personalities;

Loss of a parent, especially upsetting if happening in the first year of college.

Less frequent but significant counts were obtained on: Sickness in the family; wide separation of parental standards from those of the contemporary group; maternal rejection.

Old inferiority feelings refer to those forms of ego-devaluation present before, and often long before the college experience. Sexual problems include sex-tension phenomena, conflict over immature sexual trends, and non-acceptance of own sex. The other rubrics of problem material are self-explanatory.

When one tried to compare the problem material in the publications from different schools (Table IV) one found a mirroring of divergent opinions in cause and effect relationships, on descriptive and genetic concepts so characteristic to present-day psychiatry.

Raphael (University of Michigan) lists forty-two headings. To facilitate comparisons it was possible to group these under the more general titles used herein—with the exception of the following two: "pronounced tendency to excitability and tensional response," and "special shocks." Examples of this regrouping are: "worry over school work," "poor scholastic achievement," "poor methods of

Table IV
PROBLEM MATERIAL
(Percentage of cases studied)

	Wellesley	Univ. of Michigan	Harvard Fleming	Harvard Tillotson	Univ. of Penn.	Vassar Riggs	Vassar Langner	Yale Fry	Univ. of Minn.
Academic	26.4	13.5	27.5*	xx		x		xx	x
Family	21.2	8.5	13.5		xxx	xx	x	x	xxx
Immaturity	14.2	22.1			xx	x	x		x
Social	16.8	28.9	18.8		x	x	x	x	
Old Inferiority Feelings	6.5	5.9				x	x		
Sexual	4.2	3.2	23.6		x	x		x	x
Vocational	4.6	2.7	27.5*				x		
Economic	2.8	4.4	11.8	x	x	x		x	x
Physical	4.2	1.6	4.8		x	x			xx
Tendency to Excitability and Tension Response		8.3							
Special Shocks		.4							

* Academic and vocational problems combined.

study," "worry over examinations," "academic overload," which have been classified as academic problems; while "specially disturbing family influences," "conflicts with family," "poor general family background," "poor home training," and "unfavorable heredity" have been classified as family problems.

Raphael's figures are given as percentages of his 2301 cases in which the problem occurred as a primary and as a secondary factor. By changing these percentages to the number of cases in which the problem is listed, which is really the same as the number of times the problem occurred in the total of cases studied, one could readily compute the percentage frequency of any given problem.

In Fleming's (Harvard) material, problem content is not given for cases diagnosed as neuroses and psychoses. Consequently, data on only seventy-five of his hundred and ninety-six cases were available for comparison. Figures were given as number of cases evidencing each problem. Percentage frequency of each problem was directly computed. Academic and vocational problems had been listed together, and the rubric "sexual" included courtship and marriage problems.*

Data from other schools have been shown by checks indicating the stress of mention of the problem.

While fairly general agreement is apparent in problem material the one really significant point is that the first four problem groups are the largest in all the schools, viz., academic, social, family and immaturity.

In infirmary admissions (Table V) one has

Table V
ADMISSIONS TO INFIRMARY
(Number of cases)

For rest and change of environment	69
To tide over acute symptoms	66
For observation	7
For protection against suicide	15
Total	157*

* 20% of case load.

* Personal communication.

the records of the more acute problems—about twenty per cent of the case load. Most of these instances are emotional crises with sleep disturbances, and fatigue states. Over the six years there were three suicidal attempts, all with the feminine instrument, poison, and none fatal.

Summary and Conclusions

1) Six years of psychiatric practice in a large women's college is presented. This period saw a doubling of the clientele and a shift from work with the more neurotically handicapped students to those less so, but who were struggling with immediate life problems, usually those related to the college experience. Some of the problems have been discussed. The reason for this shift was the increasing use of the psychiatrist by the academic deans and other college functionaries.

2) The findings in this women's college have been compared with those in a men's college and in a coeducational university. Distribution of cases in the different college years, types of cases, and problems they presented were in such close agreement that one may conclude that college psychiatric practice deals with the older adolescent with his age-determined problems, in a situation of special demand and competition.

References

1 Campbell, C. Macfie: Ment. Hyg. III, 2: 199 (April) 1919.
Williams, Frankwood: Ment. Hyg. V, 2: 283 (April) 1921.
Williams, Frankwood: Ment. Hyg. IX, 2: 225 (April) 1925.
Paton, S.: Scientific Monthly, 19: 625 (Dec.) 1924.
Ruggles, A.: Ment. Hyg. IX, 2: 261 (April) 1925.
Ruggles, A.: Internat. Conf. on Ment. Hyg., 1930.

2 Cobb, S.: Jour. of Industrial Hygiene, 3: 311 (Feb.) 1922.
Blanton, S.: Ment. Hyg. IX, 3: 478, (July) 1925.
Morrison and Diehl: J. A. M. A., Vol. 83, p. 1666 (Nov.) 1924.
Leatherman and Doll: Ohio State University Studies II, No. 2, 1925.
Pressy, S. L.: *Research Adventures in University Teaching,* Bloomingdale, Ill., Public School Publishing Co., 1927.
Bridges, J. W.: Jour. of Abn. and Soc. Psychol., 22: 227 (Oct.-Dec.) 1927.
Angell, R. C.: *A Study in Undergraduate Adjustment,* Chicago University Press, 1930.
Schumacher, H. C.: Journal-Lancet, 57: 503 (Nov.) 1937.

3 Corson, H. F.: Ment. Hyg. XI, 3: 496 (July) 1927.
Appel and Smith: Ment. Hyg. XV, 1: 52 (Jan.) 1931.
Anderson and Kennedy: Ment. Hyg. XVI, 3: 353 (July) 1932.

4 Raphael, T.: Am. Jour. of Psychiatry, 92: 855 (Jan.) 1936.
Raphael, T.: Ment. Hyg. XX, 2: 218 (April) 1936.

5 Tillotson, K.: New Eng. Jour. of Med., 216: 9 (Jan.) 1937.
Fleming, R.: Journal-Lancet, 59: 258 (June) 1939.

6 Kerns, H. N.: Ment. Hyg. XI, 3: 489 (July) 1927.
Smith, S. K.: Ment. Hyg. XII, 1: 38 (Jan.) 1928.
Morrison, A. W.: Ment. Hyg. XII, 1: 48 (Jan.) 1928.
Riggs and Terhune: Ment. Hyg. XII, 3: 559 (July) 1928.
Palmer, H. D.: Ment. Hyg. XVIII, 2: 233 (April) 1934.
Langner, H.: Am. Jour. Orthopsychiatry, V: No. 4, p. 417 (Oct.) 1935.

7 de Berry, E. M.: Minnesota Medicine, XX: 427 (July) 1937.

8 Murray, J. M.: Ment. Hyg. XXII, 3: 400 (July) 1938.

9 Palmer, H. D.: Ment. Hyg. XXIII, 4: 544 (Oct.) 1939.

10 Hymanson, A.: Arch. Pediat., LXV, p. 727 (Dec.) 1938.

11 Chambers, O. R.: *Research Adventures in University Teaching,* Bloomingdale, Ill., Public School Publishing Co., 1927.

12 Fry, C. C.: Ment. Hyg. XXIII, 2: 268 (April) 1939.

13 Raphael, T.: Am. Jour. of Psychiatry, 95: 3: 659 (Nov.) 1938.

14 Palmer and Harper: Ment. Hyg. XXI, 3: 397 (July) 1937.
Palmer and Harper: Journal-Lancet, 58: 250 (May) 1938.

SUBSCRIBE NOW

— to —

DISEASES OF THE NERVOUS SYSTEM

(A Practical Monthly Journal on Psychiatry and Neurology)

Subscription $2.50 Per Year

The Value of Electroencephalography in Neurology*

A. E. BENNETT, M.D.
Omaha, Nebraska

Dr. Bennett received his degree from the University of Nebraska; his postgraduate training in Neuropsychiatry from the Philadelphia General Hospital, Orthopedic Hospital and Nervous Infirmary and the Phipps Psychiatric Clinic of Johns Hopkins Hospital. He has been in the private practice of neuropsychiatry since 1924. He is an Associate Examiner, American Board of Neuropsychiatry; member, American Neurological Association, Central Society for Clinical Research, Central Neuropsychiatric Association, Association for Research in Nervous and Mental Diseases; and a Fellow of the American Psychiatric Association. Dr. Bennett is Neuropsychiatrist-in-Chief of the Bishop Clarkson Memorial Hospital at Omaha; and Director of the Fever Therapy Research Department of the University of Nebraska. Dr. Bennett is co-author of the Manual on "Psychiatric Nursing Technic."

The development of accurate methods of recording the electrophysiologic activity of the cerebral cortex is the most important diagnostic contribution to clinical neurology in the past decade. In my opinion, it will soon become a routine procedure in every complete neuropsychiatric examination.

In our clinic we use a two-channel amplifying recording system that is entirely adequate for all practical purposes. Three bilateral electrodes are placed upon the patient's skull in line with the pupils of the eyes and in positions overlying the frontal, motor and occipital areas of the cortex.

The Normal Record

The predominant rhythm is called alpha or Berger rhythm. This is composed of rhythmic electrical potentials which occur in interrupted series and have a frequency of 8 to 12 cycles per second. Fifty to seventy-five per cent of the alpha activity is obtained from the occipital leads. Less of this activity occurs anteriorly. Very little of it is obtained in the transmotor and little or none in the fronto-motor leads.

A second type of normal rhythm, called beta activity, is composed of smaller waves occurring at the rate of 20 to 40 cycles per second. They are of lower voltage, irregular and not in series, like the alpha activity. These waves are predominant over the frontal region. Besides these two types of waves, others are seen which are called random activity.

The alpha rhythm is not constant in childhood. Children under 10 years of age show only occasional regular sequences of rhythmic activity at the rate of 4 to 5 cycles per second.

The Abnormal Record

(1) A disturbance of normal rhythm. (2) Asymmetry between the hemispheres. (3) Slow potentials or delta waves which occur at a frequency below 8 cycles per second.

Deviation from the normal pattern may be evident with any type of pathologic process in the cerebral cortex. The only pathognomonic type of wave pattern is the so-called spike and wave form of petit mal epilepsy. In general, the more severe the cortical affection, the slower and of greater amplitude are the waves; that is, the delta wave.

Neoplasms—Cerebral tumors themselves are inactive but the neighborhood tissue about the neoplasm gives rise to the abnormal wave. Here we note a local appearance of slow potentials, 5 to 6 cycles per second. Tumors near the surface are readily localized by the EEG record. Deep-seated tumors and those of the posterior fossa are more difficult to localize. There are reports in the literature of as high as 86 per cent successful localization by means of the electroencephalogram.

Head Trauma—In head injuries with resultant cortical lesions such as intracerebral hemorrhages and edema, slow high voltage potentials appear about the damaged region. As recovery from head injury proceeds, the EEG abnormality diminishes. It seems to be a more sensitive index to the extent of damage than are the clinical findings, since electroencephalographic changes often persist for some time after all clinical signs have disappeared. The findings are especially clear cut when epileptic seizures or personality changes are present. The EEG record is also extremely helpful in determining the post-concussion syndrome and differentiating it

* Presented before the Omaha Mid-West Clinical Society, October 29, 1941.

from hysteria or malingering. We believe that the diagnosis of hysteria or malingering in head injuries should never be made unless an accompanying normal electroencephalogram is obtained. An abnormal record is strong evidence that an organic syndrome exists, but one has to keep in mind the possibility that other types of cerebral disease may produce the abnormal record; therefore, this evidence should be considered as a laboratory type to be interpreted with the clinical history and findings.

Degenerative Diseases—Such organic diseases as presenile dementia, cerebral arteriosclerosis, the encephalitides, acute and chronic chorea, all show a decrease in the alpha rhythm with the appearance of many slow potentials throughout the various leads.

In acute infectious chorea this abnormal rhythm slowly disappears as the patient recovers. In chronic degenerative diseases these changes persist indefinitely. The electroencephalographic record is extremely important in differentiating such cases from suspected functional nervous disorders.

Epilepsy—In convulsive disorders the electroencephalographic evidence has been of the greatest value. The great majority of epileptic patients either of the grand mal or of the petit mal type show distinctive diagnostic changes. (1) Three to four cycles per second waves appear at random from 1 to 2 seconds throughout the various leads, then a regular pattern follows only to be broken up by these slow waves. This is the so-called paroxysmal cerebral dysrhythmia which is considered to be diagnostic of an epileptiform state. (2) The pathognomonic spike and wave pattern of petit mal epilepsy. If this record is not seen in the normal course of events, hyperventilation of the patient for a number of minutes will frequently cause these spike and wave forms to appear. (3) A local focus with the appearance of slow potentials or delta waves often establishes a cortical trigger zone or the site of epilepsy. If this is confirmed clinically and perhaps by pneumoencephalography, it may indicate that surgical treatment should be considered. Repeated records of epileptic patients are of extreme value in determining the results of therapy. As the patient improves under treatment with a cessation of the seizures, the EEG record tends to approach the normal.

Behavior Problems — Electroencephalography is paving the way toward a better understanding of the behavior problem and definitely establishing the fact that a high percentage of these cases have an organic basis. In various clinics 60 to 80 per cent of behavior disorders have been found to show abnormal records with slow abnormal potentials increased in severity by hyperventilation and often with disorganized irregular patterns similar to those in epilepsy.

Paresis—In all well-advanced cases of paretic dementia there is disturbance in the normal rhythm with an absence of alpha activity and the appearance of abnormal waves especially in the frontal regions. We have found that abnormal records persist in the large majority of cases which show no clinical remission from therapy. In cases that do respond to artificial fever therapy and progress to a good clinical remission, the EEG records return to about normal.

In certain early cases we have reason to believe that the EEG changes may antedate the clinical symptoms of general paresis necessary to a diagnosis. If these observations are confirmed by future studies, we may find in the electroencephalographic method the earliest possible way of diagnosing paretic dementia. This would be of extreme value as we might be able to determine from a large group of asymptomatic neurosyphilis patients those who are in danger of progressing to paretic dementia and thus to establish adequate early therapy to prevent this serious brain disease.

The following are illustrative examples of the value of electroencephalographic observations:

Case 1—Male, aged 31, in April, 1940, had suffered a head injury of minor degree which was said to have produced about 30 minutes of unconsciousness. From that time on he complained of various types of head sensations and questionable diplopia with loss of hearing and presumably was totally disabled for over a year. He had also developed a weakness of the left arm and leg, with numbness and a limp. This patient, after a neurologic consultation, had been declared totally and permanently disabled.

Our findings showed a wholly functional disorder. The asserted loss of hearing was very suggestive of wilful malingering. The

patient showed functional loss of sensation and motor weakness over the left side of the body. The problem was one of determining whether an organic brain disease really existed, whether the patient was suffering from an hysterical psychoneurosis or was malingering. The question of a large compensation settlement was involved. The electroencephalographic picture showed no evidence of electrocortical dysfunction. The record was entirely normal throughout.

This evidence was accepted by the court along with strong clinical evidence that this patient was malingering. This case illustrates the extreme value of the EEG record in differentiating an organic from a functional post-traumatic syndrome.

Case 2—Male, aged 46, in December, 1940, met with a very severe head injury. He was found in deep shock, totally unconscious, alongside the highway by a state patrolman. He remained in deep coma for about three days. Upon regaining consciousness he talked jargon in disconnected fashion for a number of weeks. There was gradual improvement, but he never regained completely his normal speech function. Personality and sensorium changes persisted. A neurologic consultation about two months after his injury revealed no evidence of organic focal disease. Electroencephalography at that time showed a slight diffuse cortical dysfunction but no focal signs. About four months after his injury the patient showed the clinical symptoms and signs of a right hemiparesis. Electroencephalographic findings also showed distinct evidence of progression with pathologic slow waves throughout the left frontomotor and frontal leads indicating a focal lesion.

The EEG record confirmed the clinical findings of a focal lesion from which probably vascular thrombosis and the right hemiparesis had developed. This patient was declared totally incapacitated by his head trauma.

Case 3—Male, aged 40, showed no typical clinical or psychiatric signs of general paresis. A strongly positive spinal fluid was discovered during the routine examination.

The electroencephalogram revealed poor alpha activity and frequent slow waves, with greatest involvement through the frontal leads. This record was of extreme value in determining that this patient had passed from the asymptomatic stage of neurosyphilis into early general paresis. It is in this stage that artificial fever therapy is a specific treatment.

Case 4—Male, aged 30, had been subject to frequent grand mal seizures not previously controlled by therapy. The electroencephalogram showed disturbance in cortical function particularly in the right frontomotor and transfrontal leads. Poor alpha rhythm and the appearance of slow potentials indicated the epileptic tendency. After combined phenobarbital therapy and dilantin, the check-up electroencephalogram showed a perfectly normal record.

This case illustrates the value of the EEG record in determining the effectiveness of therapy. All epileptic patients under treatment should have records made from time to time similar to EKG check-ups in certain heart cases, to determine progress under therapy.

Conclusion

Electroencephalography has reached a stage of development of great value in diagnosis. It is a guide in prognosis and an aid in the therapy of many neurologic diseases.

Its practical value is shown especially well in differentiating organic from functional post-trauma head states; also in the early diagnosis of general paresis and as an index to the recovery of the patient. Its accuracy in localizing cerebral neoplasms is high. One of the most useful fields is in the management of epilepsy, in the differentiation of organic and idiopathic types and in the evaluation of any therapy employed in the cases under discussion.

607 Medical Arts Building.

NEWS NOTE

Dr. A. A. Leonidoff, Poughkeepsie, New York, presented a paper entitled: "Problems and Difficulties in Treating Tuberculosis Among Mentally Ill Patients in Psychiatric Hospitals" at a meeting of the New England States Chapter of the American College of Chest Physicians held at the Harvard Club, Boston, May 18.

Examination of the Alcoholic Patient: Problems in Differential Diagnosis

H. HOUSTON MERRITT, M.D.
Boston, Massachusetts

Dr. Merritt was graduated from Johns Hopkins University School of Medicine in 1926. He is a Diplomate of the American Board of Psychiatry and Neurology; member, American Society for Clinical Investigation, the American Neurological Association and the Association for Research in Nervous and Mental Diseases. At present Dr. Merritt is Associate Professor of Neurology, Harvard Medical School and is Assistant Director of the Neurological Unit, Boston City Hospital.

The alcoholic individual admitted to a general hospital is more than a patient who is addicted to the use of alcohol. He is a biologic entity and is subject to all of the illnesses and infirmities of his fellow humans. This fact is often overlooked and because the patient is an alcoholic there is a tendency to curtail the physical examination or to eliminate some or all of the laboratory tests which are routinely performed on all hospital admissions. In a similar manner, the presence of any abnormalities in the physical or mental state, particularly the level of consciousness, is regarded very lightly and readily attributed to the effects of alcohol in one known to be addicted to its use or having the odor of alcohol on his breath. In other patients such symptoms or signs are usually a cause for great concern to the physician.

It may seem trite to emphasize the fallacy of this attitude, but any physician who has had experience with the care and treatment of alcoholics is impressed with the frequency with which serious diseases are overlooked or neglected because the patient happens to be an addict.

It has been stated that one suffering from alcoholism may be heir to all of the ills common to mankind, but in addition he is, directly or indirectly as a result of his intoxication, particularly subject to develop certain diseases. A few of these need special emphasis: (1) Infections such as pneumonia are very common in alcoholics possibly as result of undue exposure. (2) Disturbances of the function of the gastrointestinal tract—gastritis, or disturbance of the lower gastrointestinal tract resulting from the alcohol itself and the associated dietary disturbance. (3) Deficiency states, such as pellagra with cutaneous and neuritic symptoms, beriberi with cardiac symptoms, and other syndromes associated with lack of vitamins A, B or C. These deficiency states are common in this class of patients for several reasons. Their intake of nutritious foods with a high vitamin content is usually very low on account of anorexia, and the absorption of ingested food is impaired by changes in the gastrointestinal mucosa, by vomiting and diarrhea. There is an additional factor in that the vitamin requirements of these individuals is increased by the large caloric intake of a non-vitamin containing food, i.e., alcohol. (4) Single neuritis as result of pressure while in alcoholic stupor or multiple neuritis as result of the combination of the beverage with vitamin deficiency. (5) Injuries to the skull and brain. Fractures of the skull with cerebral contusion, subdural or extradural hemorrhages are common in alcoholics since they are apt to fall in their drunkenness or become engaged in brawls.

Thorough examination of the patient is needed to detect the above and other common conditions, and their early determination is often necessary to save life or to facilitate a maximum recovery. The study of the patient should include an adequate history which must be obtained from relatives or friends, and a thorough examination of the heart, lungs and abdomen. Special attention should be paid to the head for lacerations, bleeding from ears or nose, hematomas of the scalp or ecchymosis around the eyes. In the comatose patient a neurologic examination is especially important. The size, shape and reaction of the pupils to light should be noted and the fundi examined. The presence or absence of spontaneous movements of the eyes, face and extremities should be observed. If the coma is so deep that none is present, an attempt should be made to produce such movements by stimulation. The deep and superficial reflexes should be tested.

Laboratory examination of the urine and blood should be routinely performed. In addition, the blood chemistry, x-rays of the skull or chest and the cerebrospinal fluid should be studied whenever the findings on examination or changes in the physical or mental state of the patient suggest their need.

The following case will serve as an illustration of the difficulties encountered in the diagnosis and treatment of alcoholic patients. The outcome in this patient would have been a needless fatality if he had been considered as "merely another alcoholic."

Case Report — A 46-year-old white male manufacturer who had been addicted to the use of alcohol in excessive amounts in periodic episodes for many years and had been previously treated at several hospitals for acute and chronic alcoholism was admitted to the Boston City Hospital on January 31, 1938, in a semicomatose state. The history as given by relatives was that he had been in New York on business and had returned home on the evening of January 30th. He was found lying unconscious on the bed fully clothed about 10:00 P. M. The next morning he was still comatose but responded to stimulation. Examination by his physician gave negative results. He remained in this state for the rest of the forenoon and was sent to the hospital by ambulance in the afternoon. On admission he was stuporous but responded to stimulation and to questions in an incoherent manner. Temperature, pulse and respiration were normal. The blood pressure was 130/80. There were no cuts or bruises and no bleeding from the head. There was an area of ecchymosis on the right thigh and a bruise on the left hip. Examination of the heart, lungs and abdomen revealed nothing abnormal. The pupils were small and did not react to light. The optic discs were normal. On stimulation of the extremities it was apparent that the left arm and leg did not move as well as the right extremities. The deep reflexes were increased and there was a Babinski sign on left side. The urine was normal except for the presence of a large amount of acetone. The blood contained 4,800,000 red cells, 21,000 white cells and 90 per cent hemoglobin. The blood sugar content was 118 mg. and the non-protein nitrogen 27 mg. The cerebrospinal fluid was clear and under a normal pressure (130 mm. of water). It contained 3 white cells and 12 red cells, 54 mg. of protein. The Wassermann and colloidal gold reactions were negative.

It was thought that this patient possibly had a subdural hematoma which would explain the hemiplegia and the comatose state. An exploratory craniotomy was performed on the right side by the neurosurgeons but no hematoma was found. There was an improvement in the condition of the patient after the operation, but in the ensuing 10 days he complained of severe headache, the left hemiplegia persisted and he became very drowsy. A mild degree of choked disc developed and the cerebrospinal fluid pressure rose to 260 mm. It was thought advisable to explore the left cerebral hemisphere on February 11. At this operation a large partly organized subdural clot was removed. After a somewhat stormy convalescence, the patient gradually recovered the full use of his left arm and leg and returned to work. There has not as yet been any recurrence of the alcoholism.

It is evident that if the initial symptoms pointing to a central lesion had been ignored under the general picture of an acute state of intoxication and the surgical intervention had not been carried out, the unfortunate patient would have died. The lesson is obvious.

818 Harrison Avenue.

NEWS NOTE

A recent letter from Geo. S. Stevenson, Medical Director, The National Committee for Mental Hygiene, contains a copy of a personal letter to Dr. Wm. L. Russell, New York, from Dr. J. R. Rees, Director of the Tavistock Clinic in London, and Consulting Psychiatrist to the Army. Dr. Rees mentions the great shortage of trained psychiatrists in England, for both military and civilian posts. He asks "whether it would be possible to get a group of psychiatrists over from the States to help us." While it is realized that our own military demands for psychiatrists are ever increasing, qualified persons interested in working abroad during the emergency are urged to communicate with Dr. Stevenson at 1790 Broadway, New York, N. Y.

ABSTRACTS

FAMILY CARE—A METHOD OF REHABILITATION. By Dr. Leo Maletz, Danvers State Hospital. Presented at the meeting of the Massachusetts Society for Research in Psychiatry on March 12, 1942.

Family care provides a valuable addition to the treatment program of the psychiatric hospital. It enables the hospital to supervise more closely the convalescent patient in the community and thus aid the patient through the critical phase of community adjustment to full rehabilitation. This paper was based on one hundred and ten patients placed in family care of whom ninety-six are still in the community. Prolonged hospitalization or age are not contraindications to successful placements. The success of the place lies in fitting the home to meet the psychiatric needs of the patient. In a well conducted program, the turnover is rapid. This serves to stimulate both hospital employee and family caretaker and finally the percentage of returns is considerably lower than a comparable group of unsupervised patients discharged directly to the community.

SIBLING DEATHS IN THE ANAMNESIS OF SCHIZOPHRENIA. By Saul Rosenzwieg, Ph.D., Worcester State Hospital. Presented at the meeting of the Massachusetts Society for Research in Psychiatry on March 12, 1942.

A group of approximately 125 male schizophrenic patients and comparable control psychotic and normal groups were studied to determine the incidence of sibling deaths in their histories prior to the nineteenth year of life. It was found that the schizophrenics had a higher incidence of such deaths and that the difference was statistically significant. This finding was accentuated by a supplementary inquiry regarding the death of parents. The interpretation offered emphasized the possible combined effect of a constitutional weakness in the schizophrenic families and the psychological trauma represented by the death experiences.

A NOTE ON THE PNEUMO-ENCEPHALOGRAM AND ELECTRO-ENCEPHALOGRAM FINDINGS IN CHRONIC MENTAL PATIENTS. By Dr. Elvin Semrad, Metropolitan State Hospital, and Dr. Knox Finley, Boston Psychopathic Hospital. Presented at the meeting of the Massachusetts Society for Research in Psychiatry on March 12, 1942.

The authors studied seventy-seven cases. Sixty cases were diagnosed Schizophrenia, nine Psychosis with Mental Deficiency, and eight Psychosis of the Organic Reaction Type. The majority of cases were hospitalized over ten years. Forty-four per cent of the cases showed an abnormal pneumo-encephalogram and a borderline of abnormal electroencephalogram. Forty-two per cent of the cases diagnosed Schizophrenia had both an abnormal electro-encephalogram and a borderline of abnormal electro-encephalogram. There was no consistent relationship between the character of the electro-encephalogram troung and the findings from the pneumo-encephalogram.

HYDRODYNAMICS OF CEREBROSPINAL FLUID IN GENERAL PARESIS. By Abraham L. Finesinger, M.D., Ph.D., Worcester State Hospital. Presented at the meeting of the Massachusetts Society for Research in Psychiatry on March 12, 1942.

Multiple spinal drainages were performed daily on 43 patients with functional psychoses and 29 paretics. In the morning drainage, 35 cc. of cerebrospinal fluid were removed; four hours later 10 cc. were obtained.

In both drainages, the controls revealed a significant difference in the ratio between the fall of pressure and the volum of fluid withdrawn. The morning drainage of the paretics showed a significantly difference between the initial and terminal pressure readings. The morning and afternoon initial pressures were the same for both groups.

In the controls, there were 7 cells in the morning, and 21 in the afternoon; in the paretics, there were 19 and 78, respectively. The intra-group differences of 14 and 59 cells, as well as the inter-group difference of 45, are statistically significant.